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Appl. No. 09/666,630
Appeal Brief in Response
to final Office action of 13 July 2005
TRANSMISSION

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By: 

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

Appellant(s) : KUPARATI, Kaushal
Serial No. : 09/666,630
Filed : September 20, 2000
For : TELEVISION PROGRAM RECOMMENDER WITH AUTOMATIC
IDENTIFICATION OF CHANGING VIEWER PREFERENCES
Examiner : Johnny Ma
Group Art Unit : 2671

December 12, 2005

BRIEF FOR APPELLANT

Mail Stop Appeal Brief - Patents
Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

Sir:

Appellant appeals the decision of the Examiner in Art Unit 2671, finally rejecting claims
1-32.

A Notice of Appeal was filed on October 12, 2005. Appellant hereby appeals to the
Board of Patent Appeals and Interferences from the Examiner's Decision, in the Official Action

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dated July 13, 2005, finally rejecting claims 1-32, and from the Advisory Action dated September 21, 2005. A check in the amount of \$500 is enclosed herewith.

(i) **Real party in interest**

The real party in interest is Philips Electronics North America Corporation, a Delaware corporation with offices at 1251 Avenue of Americas, New York, New York 10020, to which Appellants have assigned all interest in, to and under this application, by virtue of an assignment as recorded at Reel 11152, Frame 0254-0255 of the Assignment records of the U.S. Patent and Trademark Office.

(ii) **Related appeals and interferences**

Upon information and belief, there are no other appeals or interferences, which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

(iii) **Status of claims**

The application was filed on September 20, 2000. The application was filed with claims 1-32.

In a Final Office Action (the FOA) dated July 13, 2005, claims 1-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over US 5,801,747 to Bedard (Bedard) in view of US 5,734,444 to Yoshinobu (Yoshinobu).

In an Advisory Action (the AA) dated September 21, 2005, the Examiner indicated that Appellant's response filed on August 24, 2005 was considered. The Examiner asserted that the application was not in condition for allowance.

The status of the claims as set out in the Advisory Action is:

Claims allowed: None

Claims objected to: None

Claims rejected: 1-32

The rejected claims are set out in the Appendix attached hereto.

The rejected claims are being appealed.

(iv) **Status of amendments**

Appellants' response filed on August 24, 2005, proffered after final rejection, has been considered. Appellants did not otherwise cancel or amend any of the claims that are the subject of this appeal.

(v) **Summary of claimed subject matter**

The claimed invention is directed to a method and apparatus for identifying changing viewing preferences and generating television program recommendations based on the viewing history of a viewer. See Specification, p. 2, lines 8-16. The claimed invention establishes at least two history sub-sets, VH_1 and VH_k , for a given time interval, for example, between 6pm and Midnight, generates a set of program recommendation scores based on each of the established subsets, and compares the sets of scores so as to identify a viewer's viewing habits.

Viewing history sub-sets VH_1 and VH_k can span the same time interval, but may be separated, e.g., by several weeks or months. Subsets $VH_1 \dots VH_x$ may be selected by uniformly randomly sampling subsets of TV programs from the entire viewing history. Alternatively, the subsets each are selected based on a time span that is less than the entire time period of the viewing history. See Specification, page 6, lines 5-10.

As recited in independent claim 1, the invention comprises a method of attacking a screening algorithm that includes: establishing at least two viewing history sub-sets, VH_1 and VH_k , from a viewing history (See Specification, page 4, lines 15-18); generating a corresponding set of program recommendation scores, S_1 and S_k , for a set of programs in a given time interval based on the at least two viewing history sub-sets, VH_1 and VH_k (See Specification, page 4, lines 18-20); comparing the sets of program recommendation scores, S_1 and S_k based on respective viewing history sub-sets, to identify a change in the viewer preferences (See Specification, page 8, lines 26-33).

As recited in independent claim 11, the invention the invention comprises a method of attacking a screening algorithm that includes: establishing at least two viewing history sub-sets, VH_1 and VH_K , from a viewing history (See Specification, page 4, lines 15-18); generating a corresponding set of program recommendation scores, S_1 and S_K , for a set of programs in a given time interval based on the at least two viewing history sub-sets, VH_1 and VH_K (See Specification, page 4, lines 18-20); comparing the sets of program recommendation scores, S_1 and S_K based on respective viewing history sub-sets, to identify a change in the viewer preferences. (See Specification, page 8, lines 26-33), and deleting a portion of the viewing history if the sets of program recommendation scores, S_1 and S_K are substantially similar (See Specification, page 7, lines 5-11).

As claimed in independent claim 16, the invention comprises a system configured to establish at least two viewing history sub-sets, VH_1 and VH_K , from a viewing history (See Specification, page 4, lines 15-18); generate a corresponding set of program recommendation scores, S_1 and S_K , for a set of programs in a given time interval based on the at least two viewing history sub-sets, VH_1 and VH_K (See Specification, page 4, lines 18-20); and compare the sets of program recommendation scores, S_1 and S_K based on respective viewing history sub-sets, to identify a change in the viewer preferences. (See Specification, page 9, lines 1-8)

As recited in independent claim 26, the invention comprises a system which is provided with a processor operatively coupled to the memory and configured to establish at least two viewing history sub-sets, VH_1 and VH_K , from the viewing history (See Specification, page 4, lines 15-18); generate viewer profiles, P_1 and P_K , corresponding to the at least two viewing history sub-sets, VH_1 and VH_K (See Specification, page 8, lines 26-33); generate a corresponding set of program recommendation scores, S_1 and S_K , for a set of programs in a given time interval based on the viewer profiles, P_1 and P_K (*Id*); compare the sets of program recommendation scores, S_1 and S_K , to identify a change in the viewer preferences (See Specification, page 9, lines 1-8); and delete a portion of the viewing history if the sets of program recommendation scores, S_1 and S_K are substantially similar (See Specification, page 7, lines 5-11).

As claimed in claim 31, the invention comprises an article of manufacture provided with a computer readable medium having computer readable code means embodied thereon and comprising a step to generate a corresponding set of program recommendation scores, S_1 and S_K , for a set of programs in a given time interval based on at least two viewing history portions sub-sets, VH_1 and VH_K (See Specification, page 8, lines 30-33); and compare the sets of program recommendation scores, S_1 and S_K based on respective viewing history sub-sets, to identify a change in the viewer preferences. (See Specification, page 9, lines 1-18).

As recited in claim 32, the invention comprises an article of manufacture provided with a computer readable medium having computer readable code means embodied thereon and comprising a step to generate a corresponding set of program recommendation scores, S_1 and S_K , for a set of programs in a given time interval based on at least two viewing history portions sub-sets, VH_1 and VH_K (See Specification, page 8, lines 30-33); and compare the sets of program recommendation scores, S_1 and S_K based on respective viewing history sub-sets, to identify a change in the viewer preferences. (See Specification, page 9, lines 1-18; and a step to delete a portion of the viewing history if the sets of program recommendation scores, S_1 and S_K are substantially similar 9 (See Specification, page 9, lines 7-8).

(vi) **Grounds of rejection to be reviewed on appeal**

Whether or not claims 1-32 are unpatentable under 35 U.S.C. § 1039(a) as being obvious in view of Bedard and Yoshinobu.

(vii) **Argument**

CLAIM 1

1. Independent Claim 1 (in italics, below) specifically recites:

establishing at least two viewing history sub-sets, VH_1 and VH_K , from said viewing history

Bedard teaches a system for monitoring a television-viewing activity. The system is operable to establish a single viewing history subset including multiple channels, each of which is graded based on a total number of viewing units that has been accumulated over a viewing history. The channels included in the subset are ranked based on the respective scores. As the viewer continues to watch some of the channels more frequently than others, the scores of the

frequent channels increase. Once a score becomes higher than a predetermined value, a respective channel is moved up on a preferred viewer profile listing of the most recently established subset. The listing has a maximum capacity, for example, three channels. If the listing has reached the maximum capacity, any other channel of the last subset with a score exceeding the predetermined value replaces one of the channels on the listing. See Bedard, c.2, lines 23-39.

The Examiner asserts that Bedard discloses that “the overall selection history is established into “at least two viewing history sub-sets.” See the FOA, page 4, section 3. Appellants respectfully disagree.

Bedard teaches establishing the *most recent viewing history* subset for a group of channels. Included in this subset are multiple channels some of which are grouped together so as to define a preferred listing. Bedard merely teaches a cyclical calculating technique for establishing the preferred listing within the single subset. The technique allows for selectively weighting a “new” channel, which is included in the subset but not in the listing, against the channels populating the preferred listing. See Bedard, c. 5, lines 16-58. A number of cycles during which the “new” channel is compared to the channels on the listing depends on a number of total viewing units assigned to the “new” channel over the entire viewing history. *Id.*, c. 6, lines 28-62. However, regardless of how many cycles are performed, all of the channels compared to one another are included in the same most recent subset of the viewing history. In contrast, appealed Claim 1 recites “establishing at least two viewing history sub-sets, VH_1 and VH_K , from said viewing history.”

2. Claim 1 also recites:

generating a corresponding set of program recommendation scores, S_1 and S_K , for a set of programs in a given time interval based on said at least two viewing history sub-sets, VH_1 and VH_K

The Examiner admits that Bedard teaches generating recommendation scores based on “the viewer profile history as a whole *without regard* to specific time intervals.” See the FOA, p. 5, lines 10-11.

The Examiner, however, contends that Bedard provides for “the comparison of recent selections (viewing history subset 2) to old selections (viewing history subset 1).” See, the AA, p. 2, two last lines and p. 3 lines 1-11. Again, Appellant respectfully disagrees.

Bedard teaches that the scores are generated for old and new entries which are all selected for a single, most recent subset, not for two subsets as stated by the Examiner. In particular, Bedard teaches in c. 5, lines 16-33 that

“Viewer profile array 200 is automatically populated with entries 202 as a viewer views, for more than one viewing unit, a new television channel that is *not* already included in viewer profile array 200 (preferred listing). [W]hen viewer profile array 200 is fully populated, ...[t]he method depicted in FIG. 3 utilizes a weighted least recently used algorithm to retire viewer profile entries 202 and make room for a new channel (*in the preferred listing of the same subset*).” (emphasis added)

In accordance with the above-cited portion of Bedard, the new channel of the subset is compared to each of the preferred channels only once. What differentiates the above-discussed technique of Bedard from the technique taught by Bedard in c. 6, lines 23-62, cited by the Examiner, is that

“instead of performing only one cycle (i.e., one visit to each entry 202 in viewer profile array 200 in an attempt to add a new entry 202 to array 200), *the viewer profile may make multiple cycles* through array 200, where, for example, the number of cycles may be dependent upon the number of viewing units that the channel represented by new entry 202 has been viewed.” See Bedard, c. 6. lines 28-35. (emphasis added)

In summary, Bedard teaches establishing a single subset and comparing the scores of respective channels, which include those channels that have been already placed on the preferred list and those that have been qualified by not placed yet, in order to modify the preferred listing. All of the channels belong to the same subset. In contrast, appealed Claim 1 recites “generating a corresponding set of program recommendation scores, S_1 and S_K , for a set of programs in a given time interval **based on said at least two viewing history sub-sets.**”

3. Claim 1 further recites:

comparing said sets of program recommendation scores, S_1 and S_K based on respective viewing history sub-sets, to identify a change in said viewer preferences

The Examiner states that Bedard teaches comparing the sets of recommendation scores to identify a change in viewer preferences. See the FOA, p. 5, lines 2-9. Indeed, Bedard compares scores, but these scores, as discussed above, represent respective channels included in the same history subset. In contrast, appealed Claim 1 recites that the sets of recommendation scores are generated while establishing respective different history subsets.

Thus, as compared to appealed Claim 1, Bedard fails to teach the following:

- (1) establishing two viewing history subsets,
- (2) generating a corresponding set of program recommendation scores in a given time interval based on the at least two viewing history sub-sets,
- (3) comparing the sets of program recommendation scores, S_1 and S_K based on respective viewing history sub-sets.

The Examiner attempts to cure the above-identified deficiencies of Bedard by citing Yoshinobu. In particular, the Examiner states that since Yoshinobu suggests storing of channel history data for a given hour, “[t]he claimed “programs in a given time interval” is met.” See the FOA, p.5, lines 12-14.

Yoshinobu suggests using a device operable to store channels, which have been selected for viewing on several occasions during past weeks. The stored channels each are referenced by respective days of the weeks and hours. If any particular channel was stored more frequently than a predetermined value, this channel would be assigned a favorite status and recorded on a day and time corresponding to the stored day and time, respectively. See Yoshinobu, c. 2, lines 43-67. The acquisition of the favorite channel starts at the time after actual beginning of the program or immediately before such time and is adequate to start or end the desired video recording. See Yoshinobu, c. 11, lines 30-37. Accordingly, Yoshinobu suggests recommending a program for recordation only at a current *specific* time.

Incorporating Yoshinobu in Bedard can provide each entry of a single subset of Bedard with an additional time-related information, which, however, cannot change a selection of channels to be shown on Bedard’s preferred listing. This selection would still be made based on a total number of points, as shown in FIG. 2 of Bedard, but, in addition to a group of TV categories (206) associated with each of the preferred channels, it would show a concrete time

slot during which any given category was televised in the past. While the time information would be useful, it cannot not affect a criterion for placing a new entry on the preferred listing, as taught by Bedard. Therefore, Bedard and Yoshinobu, taken in any proper combination, fail to teach generating a corresponding set of program recommendation scores based on at least two viewing history sub-sets and comparing the sets of program recommendation scores based on respective viewing history sub-sets, as recited in appealed Claim 1. In view of the foregoing, it is respectfully submitted that appealed Claim 1 is patentable over Bedard in view of Yoshinobu.

CLAIMS 2-10

Claims 2-10 depend directly from claim 1. "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious." *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Therefore, claims 2-10 are patentable over Bedard in view of Yoshinobu. Dependent claim 8 stands patentable on its own. In particular, Claim 8 recites that

at least two viewing history sub-sets, VH_I and VH_K , from said viewing history are obtained by uniformly randomly sampling sub-sets of television programs from said viewing history

Neither Bedard nor Yoshinobu taken alone or in any combination teaches or suggests the above recited structure. Similarly, Claim 9 reciting that "said at least two viewing history sub-sets, VH_I and VH_K , from said viewing history are obtained by selecting a time span that is less than the entire time period covered by the viewing history" is patentably distinguishable over the combination of the cited references.

INDEPENDENT CLAIM 11

Claim 11 recites, among others, the following;

generating a corresponding set of program recommendation scores, S_I and S_K , for a set of programs in a given time interval based on said viewer profiles, P_I and P_K

Neither Bedard nor Yoshinobu teaches or suggests generating recommendation scores.

Claim 11 also recites

comparing said sets of program recommendation scores, S_I and S_K , to identify a change in said viewer preferences

As can be seen from the above, Claim 11 recites all of those limitations that are neither taught nor suggested by a combination of Bedard and Yoshinobu, not as discussed in reference to Claim 1. Since neither Bedard nor Yoshinobu nor the combination of these teaches or suggests generating two history subsets and respective scores in a given time interval, as recited in Claim 11, the latter is deemed to be patentable of the combination as recited by the Examiner.

CLAIMS 12-15

Claims 12-15 depend from independent Claim 11 and, thus, benefit from its patentability.

INDEPENDENT CLAIM 16

Independent Claim 16 recites a system comprising, among others, a processor which is configured to:

generate a corresponding set of program recommendation scores, S_I and S_K , for a set of programs in a given time interval based on said at least two viewing history sub-sets, VH_I and VH_K ;

Bedard does not teach generating recommendation scores, and Yoshinobu does not suggest this feature.

Independent claim 16 further recites a processor configured to

generate a corresponding set of program recommendation scores, S_I and S_K , for a set of programs in a given time interval based on said at least two viewing history sub-sets, VH_I and VH_K

Neither Bedard nor Yoshinobu teaches or suggests the above-recited limitation.

Claim 16 also recites a processor configured to

compare said sets of program recommendation scores, S_I and S_K based on respective viewing history sub-sets, to identify a change in said viewer preferences.

The above-cited limitation is neither taught nor suggested by a combination of Bedard and Yoshinobu.

In the rejection of claim 16, the FOA relies upon the same basis as in the rejection of claim 1, discussed above. Because Bedard in view of Yoshinobu does not teach the above cited

limitations of claim 16, the latter is patentable under 35 U.S.C. §103(a) over the combination of these references.

CLAIMS 17-25

Claims 17-25 directly depend from claim 16 and, thus, are patentable under 35 U.S.C. §103(a) over Bedard in view of Yoshinobu.

INDEPENDENT CLAIM 26

Claim 26 recites a system comprising a processor which is configured to:

generate viewer profiles, P_I and P_K , corresponding to said at least two viewing history sub-sets, VH_I and VH_K

Bedard does not teach generating recommendation scores, and Yoshinobu does not suggest this feature.

Independent claim 26 further recites a processor configured to

generate a corresponding set of program recommendation scores, S_I and S_K , for a set of programs in a given time interval based on said at least two viewing history sub-sets, VH_I and VH_K

Neither Bedard nor Yoshinobu teaches or suggests the above-recited limitation.

Claim 26 also recites a processor configured to

compare said sets of program recommendation scores, S_I and S_K , based on respective viewing history sub-sets, to identify a change in said viewer preferences.

The above-cited limitation is neither taught nor suggested by a combination of Bedard and Yoshinobu.

In the rejection of claim 26, the FOA relies upon the same basis as in the rejection of claim 1, discussed above. Because Bedard in view of Yoshinobu does not teach the above cited limitations of claim 26, the latter is patentable under 35 U.S.C. §103(a) over the combination of these references.

CLAIMS 27-30

Claims 27-30 directly depend from Claim 26, and, thus, benefit from its patentability.

INDEPENDENT CLAIM 31

Claim 31 recites a computer readable program code means which comprises:

a step to generate a corresponding set of program recommendation scores, S_I and S_K , for a set of programs in a given time interval based on said at least two viewing history portions sub-sets, VH_I and VH_K ;

Bedard and Yoshinobu taken individually or in any proper combination with one another neither teach nor suggest the above-cited step.

Claim 31 further recites a computer readable program code means which comprises

a step to compare said sets of program recommendation scores, S_I and S_K based on respective viewing history sub-sets, to identify a change in said viewer preferences

The above-cited limitation is neither taught nor suggested by a combination of Bedard and Yoshinobu.

In the rejection of claim 31, the FOA relies upon the same basis as in the rejection of claim 1, discussed above. Because Bedard in view of Yoshinobu does not teach the above cited limitations of claim 31, the latter is patentable under 35 U.S.C. §103(a) over the combination of these references.

INDEPENDENT CLAIM 32

Claim 32 recites a computer readable program code means which comprises:

a step to generate a corresponding set of program recommendation scores, S_I and S_K , for a set of programs in a given time interval based on said at least two viewing history portions sub-sets, VH_I and VH_K ;

Bedard and Yoshinobu taken individually or in any proper combination with one another neither teach nor suggest the above-cited step.

Claim 31 further recites a computer readable program code means which comprises

a step to compare said sets of program recommendation scores, S_I and S_K based on respective viewing history sub-sets, to identify a change in said viewer preferences

The above-cited limitation is neither taught nor suggested by a combination of Bedard and Yoshinobu.

In the rejection of claim 32, the FOA relies upon the same basis as in the rejection of claim 1, discussed above. Because Bedard in view of Yoshinobu does not teach the above cited limitations of claim 32, the latter is patentable under 35 U.S.C. §103(a) over the combination of these references.

(viii) **Conclusion**

Claims 1-32 are not obvious in view of Bedard and Yoshinobu. Accordingly, it is respectfully submitted that the Examiner erred in rejecting claims 1-32 and a reversal of such rejections by this Honorable Board is solicited.

Respectfully submitted,



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APPENDIX
CLAIMS ON APPEAL

1. A method for identifying changes in television viewing preferences of an individual, comprising the steps of:
 - obtaining a viewing history indicating a set of programs that have been watched by a user;
 - establishing at least two viewing history sub-sets, VH_1 and VH_K , from said viewing history;
 - generating a corresponding set of program recommendation scores, S_1 and S_K , for a set of programs in a given time interval based on said at least two viewing history sub-sets, VH_1 and VH_K ; and
 - comparing said sets of program recommendation scores, S_1 and S_K based on respective viewing history sub-sets, to identify a change in said viewer preferences.
2. The method of claim 1, wherein said comparing step further comprises the step of comparing the top-N (where N is a positive integer) recommended television programs in each set, S_1 and S_K .
3. The method of claim 1, further comprising the step of generating viewer profiles, P_1 and P_K , corresponding to said at least two viewing history sub-sets, VH_1 and VH_K .
4. The method of claim 1, further comprising the step of presenting a user with a set of recommended programs based on one or both of said sets of programs, S_1 and S_K .
5. The method of claim 1, further comprising the step of presenting a user with a union set of recommended programs based on said sets of programs, S_1 and S_K .
6. The method of claim 1, further comprising the step of presenting a user with an intersection set of recommended programs based on said sets of programs, S_1 and S_K .

7. The method of claim 1, further comprising the step of presenting a user with a set of recommended programs, S_K , based on a more recent sub-set of said viewing history.
8. The method of claim 1, wherein said at least two viewing history sub-sets, VH_1 and VH_K , from said viewing history are obtained by uniformly randomly sampling sub-sets of television programs from said viewing history.
9. The method of claim 1, wherein said at least two viewing history sub-sets, VH_1 and VH_K , from said viewing history are obtained by selecting a time span that is less than the entire time period covered by the viewing history.
10. The method of claim 9, wherein said selected time span is an earlier similar time period to a given time interval.
11. A method for managing the storage of a viewer history in a television program recommender, comprising the steps of:
 - obtaining a viewing history indicating a set of programs that have been watched by a user;
 - establishing at least two viewing history sub-sets, VH_1 and VH_K , from said viewing history;
 - generating viewer profiles, P_1 and P_K , corresponding to said at least two sub-sets, VH_1 and VH_K ;
 - generating a corresponding set of program recommendation scores, S_1 and S_K , for a set of programs in a given time interval based on said viewer profiles, P_1 and P_K ;
 - comparing said sets of program recommendation scores, S_1 and S_K , to identify a change in said viewer preferences; and
 - deleting a portion of said viewing history if said sets of program recommendation scores, S_1 and S_K are substantially similar.

12. The method of claim 11, wherein said comparing step further comprises the step of comparing the top-N (where N is a positive integer) recommended television programs in each set, S_1 and S_K .

13. The method of claim 11, wherein said at least two viewing history sub-sets, VH_1 and VH_K , from said viewing history are obtained by uniformly randomly sampling sub-sets of television programs from said viewing history.

14. The method of claim 11, wherein said at least two viewing history sub-sets, VH_1 and VH_K , from said viewing history are obtained by selecting a time span that is less than the entire time period covered by the viewing history.

15. The method of claim 14, wherein said selected time span is an earlier similar time period to a given time interval.

16. A system for identifying changes in television viewing preferences of an individual, comprising:

- a memory for storing computer readable code; and
- a processor operatively coupled to said memory, said processor configured to:
 - obtain a viewing history indicating a set of programs that have been watched by a user;
 - establish at least two viewing history sub-sets, VH_1 and VH_K , from said viewing history;
 - generate a corresponding set of program recommendation scores, S_1 and S_K , for a set of programs in a given time interval based on said at least two viewing history sub-sets, VH_1 and VH_K ; and
 - compare said sets of program recommendation scores, S_1 and S_K based on respective viewing history sub-sets, to identify a change in said viewer preferences.

17. The system of claim 16, wherein said processor compares the top-N (where N is a positive integer) recommended television programs in each set, S_1 and S_K .

18. The system of claim 16, wherein said processor is further configured to generate viewer profiles, P_1 and P_K , corresponding to said at least two viewing history sub-sets, VH_1 and VH_K .

19. The system of claim 16, wherein said processor is further configured to present a user with a set of recommended programs based on one or both of said sets of programs, S_1 and S_K .

20. The system of claim 16, wherein said processor is further configured to present a user with a union set of recommended programs based on said sets of programs, S_1 and S_K .

21. The system of claim 16, wherein said processor is further configured to present a user with an intersection set of recommended programs based on said sets of programs, S_1 and S_K .

22. The system of claim 16, wherein said processor is further configured to present a user with a set of recommended programs, S_K , based on a more recent sub-set of said viewing history.

23. The system of claim 16, wherein said at least two viewing history sub-sets, VH_1 and VH_K , from said viewing history are obtained by uniformly randomly sampling sub-sets of television programs from said viewing history.

24. The system of claim 16, wherein said at least two viewing history sub-sets, VH_1 and VH_K , from said viewing history are obtained by selecting a time span that is less than the entire time period covered by the viewing history.

25. The system of claim 24, wherein said selected time span is an earlier similar time period to a given time interval.

26. A system for managing the storage of a viewer history in a television program recommender, comprising:

a memory for storing computer readable code; and

a processor operatively coupled to said memory, said processor configured to:

obtain a viewing history indicating a set of programs that have been watched by a user;

establish at least two viewing history sub-sets, VH_1 and VH_K , from said viewing history;
generate viewer profiles, P_1 and P_K , corresponding to said at least two viewing history sub-sets, VH_1 and VH_K ;

generate a corresponding set of program recommendation scores, S_1 and S_K , for a set of programs in a given time interval based on said viewer profiles, P_1 and P_K ;

compare said sets of program recommendation scores, S_1 and S_K , to identify a change in said viewer preferences; and

delete a portion of said viewing history if said sets of program recommendation scores, S_1 and S_K are substantially similar.

27. The system of claim 26, wherein said processor compares the top-N (where N is a positive integer) recommended television programs in each set, S_1 and S_K .

28. The system of claim 26, wherein said at least two viewing history sub-sets, VH_1 and VH_K , from said viewing history are obtained by uniformly randomly sampling sub-sets of television programs from said viewing history.

29. The system of claim 26, wherein said at least two viewing history sub-sets, VH_1 and VH_K , from said viewing history are obtained by selecting a time span that is less than the entire time period covered by the viewing history.

30. The system of claim 29, wherein said selected time span is an earlier similar time period to a given time interval.

31. An article of manufacture for identifying changes in television viewing preferences of an individual, comprising:

a computer readable medium having computer readable code means embodied thereon,
said computer readable program code means comprising:

a step to obtain a viewing history indicating a set of programs that have been watched by a user;

a step to establish at least two viewing history sub-sets, VH_1 and VH_K , from said viewing history;

a step to generate a corresponding set of program recommendation scores, S_1 and S_K , for a set of programs in a given time interval based on said at least two viewing history portions sub-sets, VH_1 and VH_K ; and

a step to compare said sets of program recommendation scores, S_1 and S_K based on respective viewing history sub-sets, to identify a change in said viewer preferences.

32. An article of manufacture for managing the storage of a viewer history in a television program recommender, comprising:

a computer readable medium having computer readable code means embodied thereon, said computer readable program code means comprising:

a step to obtain a viewing history indicating a set of programs that have been watched by a user;

a step to establish at least two portions viewing history sub-sets, VH_1 and VH_K , from said viewing history;

a step to generate viewer profiles, P_1 and P_K , corresponding to said at least two portions viewing history sub-sets, VH_1 and VH_K ;

a step to generate a corresponding set of program recommendation scores, S_1 and S_K , for a set of programs in a given time interval based on said viewer profiles, P_1 and P_K ;

a step to compare said sets of program recommendation scores, S_1 and S_K , to identify a change in said viewer preferences; and

a step to delete a portion of said viewing history if said sets of program recommendation scores, S_1 and S_K are substantially similar.

(ix) Evidence appendix

None.

(x) Related Proceedings Appendix

None.